

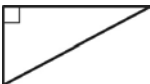
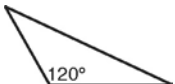

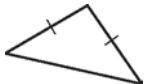
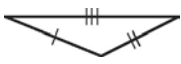


Date _____

Dear Family,

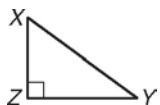
In this chapter, your child will learn how to draw, identify, and describe transformations in the coordinate plane and how they are related to triangle congruence. Then your child will learn about the different types of triangles and the ways to determine triangle congruence.

Your child will learn to classify the different types of triangles, based on side lengths and angle measurements. This table outlines the different types of triangles your child will be responsible for knowing:

Type of Triangle	Example
acute	
equiangular	
right	
obtuse	
equilateral	
isosceles	
scalene	

Your child will develop an understanding of the angle relationships in triangles. For example:

In a right triangle, the angles must add up to 180° . This means that if $m\angle Z = 90^\circ$, then $m\angle X + m\angle Y = 90^\circ$. Therefore $\angle X$ and $\angle Y$ are complementary angles.



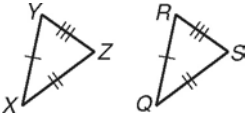
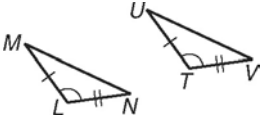
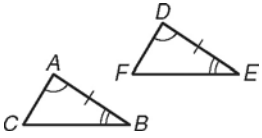
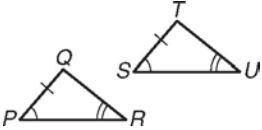
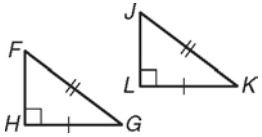
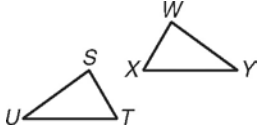
In an equiangular triangle, each angle must be equal to 60° .

Another example of angle relationships that your child will discover is the fact that the measure of an exterior angle of a triangle is equal to the sum of the measures of its remote interior angles.



This means that $m\angle 3 = m\angle 1 + m\angle 2$.

Your child will use a series of theorems and postulates to describe triangle congruence. These are summarized below:

Postulate/Theorem	Example	Conclusion
Side-Side-Side Congruence If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.		$\triangle XYZ \cong \triangle QRS$
Side-Angle-Side Congruence If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.		$\triangle LMN \cong \triangle TUV$
Angle-Side-Angle Congruence If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent.		$\triangle ABC \cong \triangle DEF$
Angle-Angle-Side Congruence If two angles and a nonincluded side of one triangle are congruent to the corresponding angles and nonincluded side of another triangle, then the triangles are congruent.		$\triangle PQR \cong \triangle STU$
Hypotenuse-Leg Congruence If the hypotenuse and a leg of a right triangle are congruent to the hypotenuse and a leg of another right triangle, then the triangles are congruent.		$\triangle FGH \cong \triangle JKL$
Corresponding Parts of Congruent Triangles are Congruent. (CPCTC)		$\overline{ST} \cong \overline{WX} \quad \angle S \cong \angle W$ $\overline{SU} \cong \overline{WY} \quad \angle T \cong \angle X$ $\overline{TU} \cong \overline{XY} \quad \angle U \cong \angle Y$